Simulation Interoperability Standards Organization (SISO)

SISO Strategic Plan 2011-2015

SISO-ADM-019-2011

17 October 2011

Prepared by:

Simulation Interoperability Standards Organization

Executive Committee (EXCOM)

Revision History

Version	Section	Date	Description
Original	All	17/10/2011	Original submission

TABLE OF CONTENTS

1   Introduction

As a result of events during 2008 and 2009, the EXCOM undertook to revise the direction that SISO had previously taken in order to increase the organization's viability for the future. This document is the result of a strategic planning process that began at the Fall 2008 Simulation Interoperability Workshop (SIW) in September 2008 and continued to the publication of this document.

1.1   Purpose

The purpose of this document is to communicate to the SISO membership the strategic plans of the organization to meet the objective of the organization as defined in the SISO Vision Document, SISO-ADM-004-2010.

1.2   Scope

This document identifies the EXCOM's assessment of SISO's situation, specifies goals and direction for the organization, and provides initial implementation strategies.

1.3   Objectives

The objectives for this document are to ensure:

- SISO members understand the organization's directions;

- Current sponsor and organizational members perceive their importance and influence to SISO;

- All subordinate committees and groups coordinate their activities in concert with SISO strategic objectives.

1.4   Intended Audience

This document is intended for all members of SISO.

2   References

2.1   SISO References:

When the following documents are superseded by an approved revision, the revision shall apply. A complete list of approved SISO products that may be referenced are available by linking to "Products" through the SISO web site at http://www.sisostds.org/.

	Document Number	Title
1	SISO-ADM-002-2011	SISO Policies and Procedures (P&P)
2	SISO-ADM-004-2010	SISO Vision Document

2.2   Other References:

None

Definitions

Definitions for this document are addressed by the list of acronyms and abbreviations in Section 4.

3   Acronyms and Abbreviations

CC	Conference Committee. The leadership committee of SISO responsible for developing and presenting Simulation Interoperability Workshops throughout the year.
DARPA	Defense Advanced Research Projects Agency
DIS	Distributed Interactive Simulation
EXCOM	Executive Committee. The element of SISO responsible for policy and control of the CC and the SAC.
HLA	High Level Architecture
IEEE	Institute of Electrical and Electronics Engineers. The IEEE is a professional society that has an affiliated standards organization that develops international standards in a manner similar to SISO's. SISO SAC is the IEEE standards sponsor for simulation interoperability standards under the IEEE Computer Society Standards Activity Board (IEEE-CS SAB).
M&S	Modeling and Simulation
MSG	(NATO) Modelling & Simulation Group
NATO	North Atlantic Treaty Organization
P&P	Policies and Procedures (SISO-ADM-002-2011)
PDG	Product Development Group. The SAC-chartered group tasked to develop a standard.
SAC	Standards Activity Committee. The leadership committee of SISO responsible for developing the processes, procedures, and guidelines for standards development.
SCS	Society for Modeling & Simulation International
SG	Study Group
SIMNET	Simulation Network
SISO	Simulation Interoperability Standards Organization. SISO is a public, charitable organization (IRS 503(c)) that encourages the development of interoperable simulations through discussion of technology standards. SISO has three leadership committees: the EXCOM, the CC, and the SAC.
SISO U	SISO University. SISO's workforce development program.
SIW	Simulation Interoperability Workshop
SWOT	Strengths, weaknesses, opportunities, and threats
TCA	Technical Cooperation Agreement

4 SISO Strategic Plan

4.1 Background and Organizational Profile

The Simulation Interoperability Standards Organization (SISO) traces its history to the Distributed Interactive Simulation (DIS) Workshops that focused on creating standards based on concepts from the DARPA program, SIMNET. In late 1996, in light of the development of the High Level Architecture (HLA), the DIS organization transformed itself into a more functional organization called SISO.

SISO membership now includes more than 1300 from 51 countries, representing well over 400 organizations, including commercial, academic, government, and military agencies.

SISO's vision, as described in SISO-ADM-004-2010 is to serve the global community of modeling and simulation professionals by

- Providing an open forum for the collegial exchange of ideas

- Examination and advancement of M&S-related technologies and practices

- Developing standards and other products that enable greater M&S capability, interoperability, credibility, reuse, and cost-effectiveness

SISO operates as a scientific/educational organization under Section 501(c)(3) of the Internal Revenue Code.

4.2 Operating Principles

To ensure that SISO continues to pursue its vision, we employ the following operating principles. These principles constitute our core values. They are vital to our ability to function as an organization.

4.2.1 Responsiveness and Responsibility

SISO shall be responsive to the communities it serves. SISO shall be responsible for providing products and services that promote interoperability and reuse with the least possible impact on existing applications.

4.2.2 Quality

SISO activities and resulting products shall reflect technical excellence and the highest quality work.

4.2.3 Discipline

SISO shall exercise due process in all activities. Policies and procedures shall be publicly available and shall serve as the basis for governing the organization and its activities. SISO standards development processes shall have a balance of interests and shall not be dominated by any single interest category.

4.2.4 Fairness

SISO activities shall provide the right to appeal at all levels.

4.2.5 Openness

SISO activities shall be carried out in an open forum where any person has access to the process.

4.2.6 Consensus

SISO decisions shall be based on simple majority agreement unless explicitly stated otherwise. Votes and ballots can be conducted in person, by teleconference, or by electronic balloting, as appropriate.

4.3 Assessing the Situation

To completely understand where SISO is going, we need to first determine the starting point. In this section we will review SISO performance in the recent past; assess SISO's strengths, weaknesses, opportunities and threats; and discuss several issues that are critical to accomplishing our goals

4.3.1 Review of Past Performance

Since its founding in 1996, SISO maintained a positive cash flow and increasing retained earnings account until several events occurred to cause financial problems for the organization. The attacks on the World Trade Center and Pentagon in 2001 and the ensuing military operations, Operation Enduring Freedom and Operation Iraqi Freedom had several negative impacts on the modeling and simulation industry and on Government personnel involved in modeling and simulations:

- Reduced funding for modeling and simulation investments within the US Government and other governments;
- Reduced funding for travel to modeling and simulation events throughout the US and other governments;
- Major adjustments in emphasis throughout the international defense industry;
- Proliferation of competing conferences and workshops focused on modeling and simulation.

In recent years, SISO made several attempts to overcome declining attendance at SISO events. These included holding joint events with the Society for Modeling and Simulation International (SCS) and reaching out to other potential M&S domains, e.g. medical, entertainment, and manufacturing. One strategy adopted was to expand our presence in Europe through a Simulation Interoperability Workshop (SIW) held in Europe during the summer months. Although these events began as successful events, the organization soon understood that such events had an increased risk of impacting our finances negatively by increasing the possibility of poorly attended and high cost workshops. This, paired with declining attendance at the traditional U. S. based workshops, were the basis for SISO losses in 2007 and 2008 totaling more than US$250,000.

Realizing the problem, several actions were taken by the EXCOM to reduce costs and increase revenue from operations. These served to stem the losses, but were judged to be insufficient to provide for long-term growth and increasing value to SISO members. In the

Fall of 2008, the EXCOM established a subcommittee to draft actions and options to provide for SISO's financial and organizational future. This was combined with the results of a series of 3X5 card suggestions submitted by SISO members at the Fall 2009 SIW as input to a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. The results of the SWOT analysis formed the basis of this plan.

4.3.2 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

4.3.2.1 SISO Strengths

The EXCOM has identified several attributes of the organization that are helpful to achieving the objectives outlined by the SISO Vision Document. Without prioritization, they include:

- SISO has a mature, proven governance process

- SISO has a mature, proven process for the development of standards and other products (guidance, reference, administration).

- SISO provides a framework for collaboration on M&S technology investigation and evolution.

- SISO provides professional development opportunities at SIWs.

- SISO members are leaders in the international M&S industry.

- SISO is recognized by IEEE as a standards development organization in the field of M&S.

- SISO has a formal cooperation agreement with NATO in the field of M&S and is recognized by the NATO as the M&S Standards Development Organization for NATO.

- SISO organizes three major M&S conferences each year where its members meet and work in an open atmosphere. These events have a long history and are well known in the international M&S community.

- SISO is a co-sponsor of the M&S Professional Certification Commission.

- SISO's structure and operation are unique in the M&S community from the perspective that our workshops are not just conferences; productive work is performed in this venue and throughout the year via electronic collaboration.

- SISO adopted both the "Simulationist Code of Ethics" and the "IEEE Code of Ethics."

4.3.2.2 SISO Weaknesses

The EXCOM has also identified some attributes of the organization that are harmful to achieving the objectives. Without prioritization, they include:

- SISO is dependent on continued support from (sponsored) volunteers.
- SISO depends on annual M&S CO grant funds to maintain financial viability.

- SISO currently lacks comprehensive, transparent financial controls.
- While SISO Products are identified in standards profiles (e.g. NATO M&S Standards Profiles), the listings are such that the efforts and marketing of SISO is lost.
- SISO has a web presence that doesn't reflect its status as a technology innovator.
- SISO's is unable to muster enough support for Euro-SIWs.
- SISO's leadership is unable to obtain travel approval and funding to participate in events held outside the US.
- SISO continues to be unable to de-conflict conference and standards development activities at the SIWs.
- SISO has not succeeded in expanding from military applications to civil application areas.
- It is hard to make a case on cost-benefit of using standards or getting actively involved in developing standards rather that just waiting around and using them when they are ready.
- The best-known standards we have compete with each other (DIS, HLA, TENA), without clear guidance on when to use what. That results in sending mixed signals that don't help SISO's acceptance.
- Standards require expertise and people do not feel qualified to work in this area.
- A large group of the DIS Workshop/SISO Membership are no longer involved in distributed simulation and we have not instituted a good approach to capturing the body of knowledge that has been gained since August 1989.
- SISO is relying on attendance of members to US workshops.
- There is a perception that SISO has a narrow focus on distributed simulation (interoperability).
- We are seeing a continuing decline in exhibitor participation.
- The demographics of our community shows an aging population not being replenished by younger M&S professionals.

4.3.2.3 SISO Opportunities

The EXCOM has identified several external conditions that may be helpful to achieving our objectives:

- SISO is recognized as a Sponsor of IEEE Standards by the IEEE Computer Society and IEEE Standards Association.
- Modeling and simulation is becoming ubiquitous. As use of M&S grows and becomes more common, requirements for standards will likewise grow - highlighting the need for organizations such as SISO.
- Numerous "consumers" of M&S Standards have determined that standards help them achieve their goals (e.g. the NATO MSG-SISO TCA).

- SISO is recognized as a key leader and stakeholder across the international M&S Industry. Members of the M&S Stakeholders from organizations outside of SISO's core customer base expressed needs for standards and documented best practices for sharing across the community.
- There are opportunities for developing strategic agreements with other M&S organizations.
- M&S CO is interested in using SISO to distribute and provide configuration management of some of the certification tools.
- COTS vendors can be encouraged to adopt standards rather than develop proprietary solutions.

4.3.2.4 Threats to SISO

The EXCOM identified external conditions that could do damage to the objective(s).

- The Modeling and Simulation Industry as a whole continues to have problems quantifying the value of M&S.
- Reduced budgets and investment in M&S within the US (DoD especially) and other nations result in reductions in:
    - o User domains actively pursuing M&S solutions;
    - o People working directly on modeling and simulation;
    - o Members' ability to continue to support standards development;
    - o Members' ability to attend SIWs;
    - o Members' ability to volunteer for leadership roles in M&S societies or organizations.
- There is a proliferation of (new) organizations running conferences and workshops that compete with our workshop activities that provide a substantial portion of our funding.
- The widespread confusion about the difference between standards development and standards adoption, referring to the former as the latter while not supporting the actual work of standards development.
- Many potential supporters believe that the word "interoperability" means only wire, simulation-to-simulation interoperability. The problem seems to be that the name is perceived as the entire mission space. This limits support/interest from "hard engineering" enterprises that do not build networkable simulations.

4.4   STRATEGIES, GOALS AND OBJECTIVES

4.4.1   Conferences and Workshops

For the purpose of improving attendance at and relevance of SIWs, SISO will:

- Pursue partnerships with key stakeholders to leverage SIWs as venues for focused workshops to support their needs.
- Evaluate the structure of the U.S. SIWs to determine the feasibility of making the Spring and Fall clearly differentiated events.
- Re-energize efforts to migrate one SIW per year to the geographic vicinity of additional stakeholder communities for the purpose of expanding engagement of those communities.
- Develop and pursue a consistent and persistent approach for engaging other M&S application domains.

4.4.2 Standards Activities

For the purpose of expanding the visibility and adoption of our standards, and improving participation in standards activities, SISO will:

- Develop a framework that articulates the M&S standards that currently exist, relationships among the standards, user guidance on which standards best apply to different situations (when there are competing standards), where users can obtain the standards, and identifies areas where standards are needed but do not exist. Tie the framework to supporting simulation development and execution activities/processes, and require that new SISO Product Nominations align themselves with identified standards gaps.
- Instantiate an area of the SISO website that describes success stories on the use of SISO standards on real programs. In the "Call For Papers", explicitly request such papers, and emphasize the desire to quantify benefits versus cost of using SISO standards.
- Continue existing relationships with IEEE and NMSG. Work with these organizations to provide better visibility into the source of the standards developed by SISO.
- Investigate incentives for PDG members, especially potential users of the new standard, to volunteer for leadership positions (e.g., invite them to the EXCOM or SAC luncheon.
- Modify our mission statement and message to emphasize that while interoperability is still an area of great interest, that SISO develops and maintains standards for all aspects of simulation development. Include this expanded scope on our webpage. Review the alignment of the word "Interoperability" from the SISO name with the modified message and determine whether a name and/or acronym change would produce associated benefits.

4.4.3 Responsiveness

With the goal of being more responsiveness to its membership, SISO will:

- Apply technology to create a more active community between workshops.
- Schedule one-on-one meetings or telecons between SISO leadership and senior leadership of sponsors and organizational members to discuss needs and concerns, and to identify members of their organizations who may engage with SISO to address their needs.

4.4.4 Engagement

SISO will identify other organizations with missions that are supportive or synergistic with SISO's, e.g. the Network Centric Operations Industrial Consortium (NCOIC) and the World Wide Web Consortium (W3C). In conjunction with these organizations, SISO will:

- Identify specific topics and/or activities of mutual interest,
- Identify incentives for these organizations to participate in SISO standards activities, and
- Schedule joint events on topics and activities of interest, focusing on maximizing existing meeting plans and facilities.

SISO will pursue reciprocal participation agreements with these organizations that clearly define roles and relationships, where such agreements do not negatively impact existing SISO revenues.

4.4.5 Education

For the purpose of establishing a continuum of lifelong educational opportunities for M&S professionals, SISO will pursue educational products in three categories: Science, Technology, Engineering, and Mathematics (STEM); workforce development; and body of knowledge (BoK). In addition, SISO will engage in public advocacy for training and education about simulation standards.

4.4.5.1 STEM

SISO will pursue the following STEM strategies at the high school and university levels:

- Maintain current lists of universities offering courses related to M&S
- Enhance collaborative relationships with universities internationally for training from professional users
- Develop additional STEM activities extending the successful exemplar of the Space Smackdown to the high school level including creating mentoring opportunities at the high school level for simulation events similar to the efforts of USFIRST.org with respect to robotics.
- Provide a demonstration platform for USFIRST teams in the locality of the SIW so that students are afforded the opportunity to discuss their work and to network with the international M&S community to learn how they can apply M&S.
- Increase visibility and communications with university programs in disciplines that apply M&S, e.g. physics, biology, and engineering

4.4.5.2 Workforce Development

SISO will improve its value as a source of workforce development by:

- Recording SISO University (SISO U) tutorials and offering them online for a nominal fee.
- Continuing to expand SISO U offerings
- Using workforce development opportunities as a means for promoting international membership growth
- Strengthening relations with other simulation societies to leverage education/training opportunities and simulation usage exposure they offer
- Increasing coordination at regional and national levels for awareness of standards training and usage

4.4.5.3 Body of Knowledge

SISO will organize and market our BoK for research and personal knowledge enrichment including developing recommended reading lists of SIW papers on specific topics.